

MBI0034 sequence listing.ST25.txt  
SEQUENCE LISTING

<110> Jiang, Cai-Zhong

<120> Method for Modifying Plant Biomass

<130> MBI-0034

<160> 8

<170> PatentIn version 3.0

<210> 1

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<212> DNA

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<221> CDS

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ccc acc ggt gga gcc acc agc tca gcc aca gcc tct ggc tct tcc tcc 157  
Pro Thr Gly Gly Ala Thr Ser Ser Ala Thr Ala Ser Gly Ser Ser Ser  
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gga cgt cgt cca cgt ggt cgt cct gca ggt tcc aaa aac aaa ccc aaa 205  
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35 40 45

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Tyr Ala Thr Arg Arg Gly Cys Gly Val Cys Ile Ile Ser Gly Thr Gly  
85 90 95

gcg gtc act aac gtc acg ata cgg caa cct gcg gct ccg gct ggt gga 397  
Ala Val Thr Asn Val Thr Ile Arg Gln Pro Ala Ala Pro Ala Gly Gly  
100 105 110

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Gly Val Ile Thr Leu His Gly Arg Phe Asp Ile Leu Ser Leu Thr Gly  
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act gcg ctt cca ccg cct gca cca ccg gga gca gga ggt ttg acg gtg 493

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Pro	Arg	Thr	Thr	Gly	Val	Gln	Gln	Gln	Gln	Pro	Glu	Ala	Ser	Gln	Ser		
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Pro Pro Thr Ile Ile Thr Arg Asp Ser Pro Asn Val Leu Arg Ser His  
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Val Leu Glu Val Thr Ser Gly Ser Asp Ile Ser Glu Ala Val Ser Thr  
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85 90 95

Ala Val Thr Asn Val Thr Ile Arg Gln Pro Ala Ala Pro Ala Gly Gly  
100 105 110

Gly Val Ile Thr Leu His Gly Arg Phe Asp Ile Leu Ser Leu Thr Gly  
115 120 125

Thr Ala Leu Pro Pro Pro Ala Pro Pro Gly Ala Gly Gly Leu Thr Val  
130 135 140

Tyr Leu Ala Gly Gly Gln Gly Gln Val Val Gly Gly Asn Val Ala Gly  
145 150 155 160

Ser Leu Ile Ala Ser Gly Pro Val Val Leu Met Ala Ala Ser Phe Ala  
165 170 175

Asn Ala Val Tyr Asp Arg Leu Pro Ile Glu Glu Glu Glu Thr Pro Pro  
180 185 190

Pro Arg Thr Thr Gly Val Gln Gln Gln Gln Pro Glu Ala Ser Gln Ser  
195 200 205

Ser Glu Val Thr Gly Ser Gly Ala Gln Ala Cys Glu Ser Asn Leu Gln  
210 215 220

Gly Gly Asn Gly Gly Gly Gly Val Ala Phe Tyr Asn Leu Gly Met Asn  
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<223> G2789

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Met Asp Glu Val Ser Arg Ser His Thr Pro  
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caa ttt cta tca agt gat cat cag cac tat cac cat caa aac gct gga 159  
Gln Phe Leu Ser Ser Asp His Gln His Tyr His His Gln Asn Ala Gly  
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cga caa aaa cgc ggc aga gaa gaa gaa gga gtt gaa ccc aac aat ata 207  
Arg Gln Lys Arg Gly Arg Glu Glu Gly Val Glu Pro Asn Asn Ile  
30 35 40

ggg gaa gac cta gcc acc ttt cct tcc gga gaa gag aat atc aag aag 255  
Gly Glu Asp Leu Ala Thr Phe Pro Ser Gly Glu Glu Asn Ile Lys Lys  
45 50 55

aga agg cca cgt ggc aga cct gct ggt tcc aag aac aaa ccc aaa gca 303  
Arg Arg Pro Arg Gly Arg Pro Ala Gly Ser Lys Asn Lys Pro Lys Ala  
60 65 70

cca atc ata gtc act cgc gac tcc gcg aac gcc ttc aga tgt cac gtc 351  
Pro Ile Ile Val Thr Arg Asp Ser Ala Asn Ala Phe Arg Cys His Val  
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atg gag ata acc aac gcc tgc gat gta atg gaa agc cta gcc gtc ttc 399  
Met Glu Ile Thr Asn Ala Cys Asp Val Met Glu Ser Leu Ala Val Phe  
95 100 105

gct aga cgc cgt cag cgt ggc gtt tgc gtc ttg acc gga aac ggg gcc 447  
Ala Arg Arg Arg Gln Arg Gly Val Cys Val Leu Thr Gly Asn Gly Ala  
110 115 120

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Val Thr Asn Val Thr Val Arg Gln Pro Gly Gly Gly Val Val Ser Leu  
125 130 135

cac gga cgg ttt gag att ctt tct ctc tcg ggt tcg ttt ctt cct cca 543  
His Gly Arg Phe Glu Ile Leu Ser Leu Ser Gly Ser Phe Leu Pro Pro  
140 145 150

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Pro Ala Pro Pro Ala Ser Gly Leu Lys Val Tyr Leu Ala Gly Gly  
155 160 165 170

caa ggt caa gtg atc gga ggc agt gtg gtg gga ccg ctt acg gca tca 639  
Gln Gly Gln Val Ile Gly Gly Ser Val Val Gly Pro Leu Thr Ala Ser  
175 180 185

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Ser Pro Val Val Val Met Ala Ala Ser Phe Gly Asn Ala Ser Tyr Glu  
190 195 200

agg ctg cca cta gag gag gag gag gaa act gaa aga gaa ata gat gga 735  
Arg Leu Pro Leu Glu Glu Glu Glu Glu Thr Glu Arg Glu Ile Asp Gly  
205 210 215

aac gcg gct agg gcg att gga acg caa acg cag aaa cag tta atg caa 783  
Asn Ala Ala Arg Ala Ile Gly Thr Gln Thr Gln Lys Gln Leu Met Gln  
220 225 230

gat gcg aca tcg ttt att ggg tcg ccg tcg aat tta att aac tct gtt 831  
Asp Ala Thr Ser Phe Ile Gly Ser Pro Ser Asn Leu Ile Asn Ser Val  
235 240 245 250

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Ser Leu Pro Gly Glu Ala Tyr Trp Gly Thr Gln Arg Pro Ser Phe  
255 260 265

gataatatca ttgataatat aagtttcgtc ttcttattct ttttcacttt ttaccttttt 939

cactttctta ggttttgttt taacgtttga ttaatacctg aagggttttg gaaaattttc 999

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35 40 45

Phe Pro Ser Gly Glu Glu Asn Ile Lys Lys Arg Arg Pro Arg Gly Arg  
50 55 60

Pro Ala Gly Ser Lys Asn Lys Pro Lys Ala Pro Ile Ile Val Thr Arg  
65 70 75 80

Asp Ser Ala Asn Ala Phe Arg Cys His Val Met Glu Ile Thr Asn Ala  
85 90 95

Cys Asp Val Met Glu Ser Leu Ala Val Phe Ala Arg Arg Arg Gln Arg

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100

105

110

Gly Val Cys Val Leu Thr Gly Asn Gly Ala Val Thr Asn Val Thr Val  
115 120 125

Arg Gln Pro Gly Gly Gly Val Val Ser Leu His Gly Arg Phe Glu Ile  
130 135 140

Leu Ser Leu Ser Gly Ser Phe Leu Pro Pro Pro Ala Pro Pro Ala Ala  
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Ser Gly Leu Lys Val Tyr Leu Ala Gly Gly Gln Gly Gln Val Ile Gly  
165 170 175

Gly Ser Val Val Gly Pro Leu Thr Ala Ser Ser Pro Val Val Val Met  
180 185 190

Ala Ala Ser Phe Gly Asn Ala Ser Tyr Glu Arg Leu Pro Leu Glu Glu  
195 200 205

Glu Glu Glu Thr Glu Arg Glu Ile Asp Gly Asn Ala Ala Arg Ala Ile  
210 215 220

Gly Thr Gln Thr Gln Lys Gln Leu Met Gln Asp Ala Thr Ser Phe Ile  
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Met Lys Gly Glu Tyr Arg Glu Gln Lys Ser Asn Glu Met Phe	
1 5 10	
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Ser Lys Leu Pro His His Gln Gln Gln Gln Gln Gln Gln Gln Gln	
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cac tct ctt acc tct cac ttc cac ctc tcc tcc acc gta acc ccc acc	326
His Ser Leu Thr Ser His Phe His Leu Ser Ser Thr Val Thr Pro Thr	
35 40 45	
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Val Asp Asp Ser Ser Ile Glu Val Val Arg Arg Pro Arg Gly Arg Pro	
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Pro Gly Ser Lys Asn Lys Pro Lys Pro Pro Val Phe Val Thr Arg Asp	
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acc gac cct cct atg agt cct tac atc ctc gaa gtt cct tca gga aac	470
Thr Asp Pro Pro Met Ser Pro Tyr Ile Leu Glu Val Pro Ser Gly Asn	
80 85 90	
gac gtc gtc gaa gcc atc aac cgt ttc tgc cgc cgt aaa tcc atc gga	518
Asp Val Val Glu Ala Ile Asn Arg Phe Cys Arg Arg Lys Ser Ile Gly	
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Gly Pro Gln Gly Gln Ile Ile Gly Gly Phe Val Ala Gly Pro Leu Ile	
175 180 185 190	
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Ser Ala Gly Thr Val Tyr Val Ile Ala Ala Ser Phe Asn Asn Pro Ser	
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Tyr His Arg Leu Pro Ala Glu Glu Glu Gln Lys His Ser Ala Gly Thr	
210 215 220	
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Ser Gly Gln Met Ala Gly Ser Gly Gly Glu Ser Cys Gly Val Ser Met
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Tyr Ser Cys His Met Gly Gly Ser Asp Val Ile Trp Ala Pro Thr Ala
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Arg Ala Pro Pro Pro Tyr
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Leu Thr Ser His Phe His Leu Ser Ser Thr Val Thr Pro Thr Val Asp
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Asp Ser Ser Ile Glu Val Val Arg Arg Pro Arg Gly Arg Pro Pro Gly
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Ser Lys Asn Lys Pro Lys Pro Pro Val Phe Val Thr Arg Asp Thr Asp
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Pro Pro Met Ser Pro Tyr Ile Leu Glu Val Pro Ser Gly Asn Asp Val
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Val Glu Ala Ile Asn Arg Phe Cys Arg Arg Lys Ser Ile Gly Val Cys
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Val Leu Ser Gly Ser Gly Ser Val Ala Asn Val Thr Leu Arg Gln Pro
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Ser Pro Ala Ala Leu Gly Ser Thr Ile Thr Phe His Gly Lys Phe Asp  
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Leu Leu Ser Val Ser Ala Thr Phe Leu Pro Pro Pro Pro Arg Thr Ser  
145 150 155 160

Leu Ser Pro Pro Val Ser Asn Phe Phe Thr Val Ser Leu Ala Gly Pro  
165 170 175

Gln Gly Gln Ile Ile Gly Gly Phe Val Ala Gly Pro Leu Ile Ser Ala  
180 185 190

Gly Thr Val Tyr Val Ile Ala Ala Ser Phe Asn Asn Pro Ser Tyr His  
195 200 205

Arg Leu Pro Ala Glu Glu Glu Gln Lys His Ser Ala Gly Thr Gly Glu  
210 215 220

Arg Glu Gly Gln Ser Pro Pro Val Ser Gly Gly Gly Glu Glu Ser Gly  
225 230 235 240

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Pro Pro Pro Tyr  
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Met Leu Ser Lys Leu Pro Thr Gln Arg His Leu His Leu Ser Pro  
1 5 10 15

tcc tct ccc tcc atg gaa acc gtc ggg cgt cca cgt ggc aga cct cga 155

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Pro	Met	Ser	Pro	Tyr	Ile	Leu	Glu	Val	Pro	Ser	Gly	Asn	Asp	Val	Val	
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Glu	Ala	Leu	Asn	Arg	Phe	Cys	Arg	Gly	Lys	Ala	Ile	Gly	Phe	Cys	Val	
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ctc	agt	ggc	tca	ggc	tcc	ggt	gct	gat	gtc	act	ttg	cgt	cag	cct	tct	347
Leu	Ser	Gly	Ser	Gly	Ser	Val	Ala	Asp	Val	Thr	Leu	Arg	Gln	Pro	Ser	
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Pro	Ala	Ala	Pro	Gly	Ser	Thr	Ile	Thr	Phe	His	Gly	Lys	Phe	Asp	Leu	
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gag	gga	caa	tcg	ccg	ccg	gtc	tct	gga	ggt	ggt	gga	gag	tcg	atg	tac	683
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Pro	Tyr															
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 35 40 45

Met Ser Pro Tyr Ile Leu Glu Val Pro Ser Gly Asn Asp Val Val Glu  
 50 55 60

Ala Leu Asn Arg Phe Cys Arg Gly Lys Ala Ile Gly Phe Cys Val Leu  
 65 70 75 80

Ser Gly Ser Gly Ser Val Ala Asp Val Thr Leu Arg Gln Pro Ser Pro  
 85 90 95

Ala Ala Pro Gly Ser Thr Ile Thr Phe His Gly Lys Phe Asp Leu Leu  
 100 105 110

Ser Val Ser Ala Thr Phe Leu Pro Pro Leu Pro Pro Thr Ser Leu Ser  
 115 120 125

Pro Pro Val Ser Asn Phe Phe Thr Val Ser Leu Ala Gly Pro Gln Gly  
 130 135 140

Lys Val Ile Gly Gly Phe Val Ala Gly Pro Leu Val Ala Ala Gly Thr  
 145 150 155 160

Val Tyr Phe Val Ala Thr Ser Phe Lys Asn Pro Ser Tyr His Arg Leu  
 165 170 175

Pro Ala Thr Glu Glu Glu Gln Arg Asn Ser Ala Glu Gly Glu Glu Glu

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180

185

190

Gly Gln Ser Pro Pro Val Ser Gly Gly Gly Gly Glu Ser Met Tyr Val  
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Gly Gly Ser Asp Val Ile Trp Asp Pro Asn Ala Lys Ala Pro Ser Pro  
210 215 220

Tyr  
225